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A INTRODUCTION

Simmons Woods is located in western Mackinac County, four miles southeast of Gould City. Two large tracts of existing Lake Superior State Forest (LSSF) were connected when approximately 10,000 acres of Bethlehem Steel property were purchased by The Nature Conservancy (TNC) and sold to the State of Michigan. The first parcel of 9,008.66 acres contains 5.3 miles of Lake Michigan frontage. The Lake Michigan shoreline on both sides of the second tract, 1,214.80 acres, is part of the LSSF.

The entire Bethlehem Steel tract is a level to gently rolling property comprised of 85 percent upland and 15 percent lowland. A variety of forest cover is found on the tract, which includes mixed northern hardwoods, aspen, and areas of spruce-fir type. Most of the aspen areas have been harvested, resulting in areas of regeneration but the hardwood areas exhibit well stocked poles and nominal amounts of saw timber. Access to the property is very adequate and is provided via both public roads, including hard surfaced Gould City Road, and a private network of interior gravel roads. The latter are mostly single lane roads of good quality which were developed for logging and recreational purposes.

The most significant feature of the entire property is the 28,000 feet of Lake Michigan frontage which begins at Point Patterson on the south and extends northeasterly to include the mouth of the Crow River, roughly three quarters of a mile southwest of the Big Knob State Forest Campground. Both the beginning and ending points of the lake frontage are within dedicated state forest boundaries. The great majority of the frontage is sand beach, though some areas of limestone cobble are included. Additionally, the property includes substantial frontage on the Catarac River, the Crow River and several creeks, and contains Sherman and Amadon Ponds, Burns Pond (11 acres), entire 205 acre Duel Lake, 30 acre Brown's Lake, 25 acre Mud Lake, 22 acre Stone Lake, six acre Turtle Lake, and a portion of 55 acre Dry Lake. A total of 24 miles of water frontage is contained in the entire tract, which includes the 5.3 miles on Lake Michigan, 11.5 miles of inland lake and pond frontage and 7.25 miles of river and stream frontage.

The acquisition of this property has created an ecologically significant connection between two large portions of the LSSF which forms the southwest and northeast boundaries of the tract. By securing this block of undeveloped shoreline, the fragmentation of habitat for sensitive species has been avoided, allowing for the continued maintenance of their populations. This linking of two large blocks of state forest has been a significant step in securing a 16 mile stretch of northern Lake Michigan shoreline in its natural, undeveloped state. This is among the longest protected stretches of undeveloped Lake Michigan shoreline remaining.

To meet the goal of serving all the publics who use state lands, Upper Peninsula Forest Supervisor, Bernie Hubbard, contacted local residents, the township supervisor, TNC, Mead Paper Company, the Sierra Club, Michigan Karst Conservancy, Superior Access, Michigan United Conservation Club (MUCC), Michigan Association of

developing a management plan. The members are not only representatives of each user group but also represent different management philosophies.

See Appendix A – Simmons Woods Advisory Committee

The first meeting of the advisory committee was held May 23, 1996, and included a tour of Simmons Woods. At the second meeting in June, members developed a *Mission Statement*:

“Serve the public by successfully developing a management plan for Simmons Woods, addressing concerns of all interested parties and incorporating concerns into a comprehensive plan.”

To keep focused on the Mission Statement and goals for the area, the committee decided their plan of action would be to gather information about the area and address issues involved in responsible management. These actions allowed them to develop a comprehensive management plan that incorporates the concerns of all interested parties.

There were many issues discussed regarding use of the property. One of the major issues was to get a complete inventory of the property, a project which will be completed by Naubinway Forest Management Unit staff with specific inventories being accomplished by TNC, Michigan Karst Conservancy and Michigan Natural Features (MNFI) personnel. Information concerning historical sites will be located and presented by area residents.

The majority of issues revolved around access, vehicle use, land use, protection of threatened and endangered species, accessibility for all who want to participate in the outdoor experience, preservation of historical data and sites, and education of the public to enable them to appreciate the unique features and qualities of Simmons Woods. It was agreed that use of the area would follow *State Land Use Rules for State Lands Other than State Parks and Recreation Areas (By authority conferred on the Commission of Natural Resources by Sections 2 and 3a of Act No. 17 of the Public Acts of 1921, as amended, and Sections 9 and 252 of Act No. 380 of the Public Acts of 1965, being Sections 299.2, 299.3a, 16.109 and 16.352 of the Michigan Compiled Laws)*. Any uses other than those identified, will be noted as “specified exceptions”. It was agreed that major disagreements on issues would be resolved by consensus.

B LOCATION AND HISTORY

Four Indian families were found living at Fox Point when the first white settlers came in 1868. These families lived off the wildlife of the forest, fishing, and a few vegetables that they grew. Fall and winter were spent trapping to trade with the fur dealers from Mackinac Island. In the spring, they peeled cedar bark which they sold to the white people for roofing.

The first white people stayed at Simmons Woods only during the summer to fish off

Fox Point and then went back to Mackinac Island in the winter months. Barrels to ship the salted fish were made by coopers on site. In 1873, a portion of the fishing group decided to winter in the Simmons Woods area to cut lumber for the Bay de Noc Lumber Company. After this winter, the group started homesteading in various locations in Simmons Woods. Many of the natural features and roads were named after these early settlers.

In 1902, the Simmons Company bought the holdings of virgin timber. This was the beginning of Simmons Woods and construction of housing began on Duel Lake's north shore. The first lumber mill was constructed on the southeast shore of Duel Lake. Later, the Simmons Northern Railroad was built to haul timber to other mills. The railroad came from near Gould City and ran to near Duel Lake before splitting into two branches. These were the prosperous times and at one point, 30 families dotted Duel Lake's north shore.

Simmons the town, boomed until 1906 and then the decline began. In early 1907, the Simmons Lumber Company was sold to the Earle Lumber Company. That same year a fire destroyed the town store and adjacent buildings. In late 1908, ownership transferred to the Wisconsin Land and Lumber Company of Hermansville. The sawmill burned down in 1913 along with most of the remaining buildings and houses. That effectively ended the village of Simmons. There was a gradual disintegration to the Simmons Woods area without any industry.

1 Settlements

See Appendix B - "Simmons Woods – A Short History" (1940)

2 Location within the State Forest System

Simmons Woods is located between the Big Knob area and the Batty Doe Lake area of state land south of Gould City. This 10,000+ acre block was added to the Naubinway Forest Area's 186,000 acres of state land. The Naubinway Area is now part of the Sault Management Unit in the Lake Superior State Forest and EUP Eco-region for planning purposes.

See Appendix C – Simmons Woods Location within State Forest System

3 Land ownerships

The purchase of Simmons Woods provided a well blocked in parcel of land, except for three in-holdings. The large in-holding of 205 acres around Dry Lake in Sections 1 and 2 is owned by descendants of the Earle family. They reserved an easement through state land to their property before it was sold to Bethlehem Steel Company. Michigan Limestone Company, Port Inland Operations, owns 80 acres in Section 21 and 230 acres in Section 22. Three other owners own 50 acres in Section 22 that adjoin Michigan Limestone Company lands. The west and north sides of Simmons Woods are also bounded by other private holdings.

See Appendix D – Plat Book Map Showing Ownership Pattern

4 Land Use

The far past land use was well covered in the “History Of Area” section. Simmons Woods was used as a satellite property from Blaney Park Resort for trophy deer hunting in the 1950’s and 60’s. The road system was maintained for these well-heeled customers.

In the 1960’s, Bethlehem Steel acquired the property from the Earle’s after the Blaney Park Resort era passed for a possible limestone/dolomite quarrying operation. They never did open a quarry operation in Simmons Woods but they did maintain a caretaker on the property. The company allowed recreational uses of the property through per day fees and access through the gate by the caretaker’s house. There were separate fees for fishing, hunting, camping, day use and ORV use. Most of the recreational use was dispersed, except there was group camping at Duel Lake and camping at the Steakfry Beach and along the Catarac River mouth. During the 1980’s and until the state acquired the property, Mead Paper Company had a contract to manage the forestlands and to cut enough timber each year to pay the property taxes. Mead provided road maintenance in areas where they hauled out timber products and the caretaker provided some road maintenance.

Prior allowed ORV use of the area has caused problems now that the state owns Simmons Woods, especially along the Lake Michigan shoreline. ORV use is unlawful on publicly owned Great Lakes shoreline. Signing to halt ORV use has not been too successful. Barricades using boulders has helped some but there is still illegal use going on. Having a conservation officer living on -site has not totally eliminated this illegal activity even with a concerted effort on her part.

The Bethlehem House was used for a summer church camp for children in the 1980’s and early 1990’s. The Bethlehem House has not been used as a church camp from a year prior to acquisition to the present. In fact, the most use that the Bethlehem House has received is by our advisory committee. No local group has stepped forward to use the building as a local historical museum as was hoped.

The advisory committee recommended that the dispersed recreation continue without any campgrounds being developed and that the one access point to Simmons Woods be maintained. A sizeable area was proposed for Old Growth Management, where there would be no or very little cutting allowed (discussed later). In the balance of the area, cutting would be done for management of timber products and wildlife.

5 Purchase of Property

The Great Lakes shoreline of the Simmons Woods property was identified by MNFI, a partnership between TNC and the MDNR, as an important natural area in the early 1980’s. TNC and the state have worked diligently to ensure that the area would be protected. TNC acquired the Simmons Woods property in 1995 to allow the major acquisition to meet the timeline for Bethlehem Steel and the timeline for legislative appropriation. Through funding from the Natural

Resources Trust Fund, Simmons Woods was acquired over a two-year period for just under \$ 4 million from TNC with the largest block being acquired in June of 1995. The balance of the property was acquired in 1996. Added to the blocks of state shoreline on either side of this purchase, we now have 16 contiguous miles of Lake Michigan shoreline protected from development.

6 Current Administration of Property

The land administration of Simmons Woods is provided by the Naubinway Field Office, part of the Sault Ste. Marie Management Unit. The current Unit Manager is Dean I. Reid. What activities have been accomplished, have been done by personnel from the Naubinway Field Office, US 2, P.O. Box 287, Naubinway, MI 49762; phone number (906) 477-6048.

C INVENTORY OF NATURAL RESOURCES

1 Soils

See Appendix E – Simmons Woods Soil Type Map and Soils Map Topography

2 Minerals

There are a variety of state mineral ownerships in the lands acquired for the Simmons Woods property. Some parcels are in fee ownership in which we own all the mineral rights. Also some parcels have shared mineral ownership of up to 50 %.

3 Forest Cover

See Appendix F – Simmons Woods: Acres by Cover Type

4 Wildlife

Including lakes and streams, Simmons Woods contains 20 different habitat types over approximately 10,000 acres. All the major habitats common to the southeastern Upper Peninsula (UP) are represented. While a full and complete inventory of the wildlife within Simmons Woods has not been conducted, habit diversity allows us to assume that most forest wildlife species common to the U.P. occur. In addition to evidence of the more widespread species (i.e. white tailed deer, coyote, snowshoe hare, ruffed grouse, woodcock, etc.), several species of special interest are known to utilize Simmons Woods. These species include gray wolf, moose, fisher, bald eagle and common loon.

5 Karst Features

Karst, most often limestone, areas are best known for the underground drainage systems or solutional cave systems that often evolve there but may also be characterized by intricately sculptured rock surface, sinkholes, sinking streams and springs.

Such landscapes can offer an extraordinary variety of economic, scientific, educational, recreational and aesthetic resources. They are also potentially highly sensitive, comparable in this respect to desert or coastal margins and careful protective management is essential. Effective management on karst terrain must include analysis of features beneath the surface dimensions

that managers usually consider. Cave passages traversable by man are only a tiny percentage of the below ground passages traversed by water and small

organisms. Dye traces and analyses are required to begin to understand karst hydrology.

Karst areas in Michigan are limited but this rarity increases their interest and importance. There is considerable variety in Michigan karst areas: gypsum karst is found in Kent and Iosco counties; a significant surface drainage goes underground in Monroe County and reappears at "blue holes" in Lake Erie; spectacular sinkholes and earth cracks are found in Alpena and Presque Isle Counties; and the broad band of outcrops of the Niagara Escarpment in the U.P. hosts a number of karst sinks, springs and caves.

The Niagara Escarpment, which is about 50 meters high - the same height as Niagara Falls - has a cap rock that is a distinctive, highly resistant limestone called Niagara limestone. The State of Michigan rests on a saucer of Niagara limestone where the edges of the saucer crop to the surface. Today, the Niagara Escarpment (Silurian Period - 500 million years ago) begins on the western shore of Lake Erie north of Monroe, Michigan, then goes south into and across northern Ohio, Indiana and Illinois. It then swings northward past Chicago and follows along the western shore of Lake Michigan. From there, its north facing bluffs can easily be followed all the way from Wisconsin to New York State. In northern Wisconsin, the edge of the Silurian outcrop saucer forms the Door Peninsula on the eastern side of Green Bay. It then crosses into Michigan to form the Garden Peninsula. Then, the edge of the Silurian outcrop swings east across the southern side of the U.P. and the Manitoulin Islands. Continuing its circle, it then forms the basic rock formation in the Bruce Peninsula. From there it crosses south across Ontario, Canada, to the western end of Lake Ontario. At this point, the edge of the old Silurian seas swing eastward between Lake Erie and Lake Ontario and continues across the northern part of New York State.

Simmons Woods is in the Niagara Escarpment. Because of this, it has all the use benefits and management problems described previously. Specific management suggestions are:

- make certain karst features are known before logging an area;
- have longer rest periods between cuttings to protect sensitive karst features from excessive erosion;
- dye trace to understand groundwater flow;
- erect signs explaining area geology.

6 Lakes

Of all the lakes in Simmons Woods, Duel Lake shows the most promise for successful fisheries management. During a 1996 fisheries survey, it was found that there were moderate numbers of small northern pike and limited spawning habitat for a natural increase in their numbers. In addition, yellow perch and rock

bass were abundant but growing slowly. This lake would benefit from the presence of another panfish predator. Shoreline habitat ranges from sand to gravel to large emergent boulders. Little emergent vegetation exists. Submerged habitat contains similar gradations. The central island consists mainly of jumbled rock and large boulders. Some submergent vegetation, *Elodea* and *Potamogeton americanus*, exists in scattered colonies, most noticeable in the deeper waters and around the island.

A 1996 survey of Brown's Lake produced abundant, but small, northern pike. Angler comments described a fishery of occasional large pike. Perch were moderately abundant but were growing slowly. In addition, surveyors remarked on the large numbers of forage minnows observed. However, brown bullheads dominated the catch. The observed bullhead imbalance was potentially caused by excess angling harvest of pike, which would skew the community structure towards bullheads. Rectifying that bullhead imbalance and restoring a viable fishery will require significant management intervention. Almost the entire lake perimeter is colonized by colonies of *Scirpus* and cane grass that extend well out into open water. Such emergent vegetation implies that Brown's Lake would be very good for northern pike. However, it is marginal for depth, averaging roughly three feet, with a maximum observed depth of roughly eight feet.

Water depth in Mud Lake was too shallow to allow adequate net sets. Roughly 80-90 percent of the surface is inundated by bulrush colonies. If this was a land-locked pond, we could predict frequent winter-kill situations. As the headwaters of Catarac Creek, however, it apparently benefits from significant spring water flows. Although such flow can protect the lake from winter-kill situations, winter ice depth still extends deeply into the shallow water. The resulting lack of water volume during the winter will serve to either drive most fish downstream or to concentrate them around the spring water upwelling. Both situations tend to preclude effective fisheries management in Mud Lake.

Water depth in Sherman Pond was too shallow to allow adequate net sets. It will probably not winter-kill due to flow-through of the Crow River. But the lack of water volume precludes effective fisheries management. This pond does, however, function as an upstream corridor for spawning salmonids.

Amadon Pond is similar to Sherman Pond. Fisheries' visual survey found a very shallow-water ecosystem. Angler reports, however, describe a small area of greater depth near the upstream inflow from the Crow River. During fall 1996, adult coho and chinook salmon were observed immediately below Amadon Pond. To get there they had to pass through Sherman Pond and they could easily continue upstream above Amadon Pond. In addition, because of the high numbers of small brook trout throughout the Crow River, potential also exists for spawning runs of coaster brook trout, early in the fall.

Stone Lake is too inaccessible for the kind of standard netting surveys conducted by Fisheries Division. It should, however, be visually surveyed in the

near future, to round out the Simmons Woods inventory. Management generally implies use of boat or truck access. For that reason, Stone Lake may remain natural throughout the foreseeable future.

Burns Pond is also inaccessible. Still, it should be looked at. If its limnology hints of management potential, an angling survey could provide some answers to its fishery questions. Even so, serious management efforts will require use of boats which at this time cannot be transported to the pond.

7 Rivers and Streams

The Crow River has produced angling rumors for years about smelt, salmon and coaster brook trout spawning runs. A 1996 Fisheries survey during summer months found high numbers of small brook trout. Water temperatures were quite warm and both rock bass and white suckers were also captured. Its short flow distance contains enough impoundments to produce similar warm temperatures every summer which may preclude a significant resident brook trout population. Other fish population influences include lack of deep water habitat and heavy angling harvest. Seasonal spawning migrations were recently documented for coho and chinook salmon. In addition, the large numbers of immature brook trout, found with no adults, imply a migrating spawning population, most probably coaster brook trout from Lake Michigan. Also, given good spawning habitat for those salmonid species, one can likely assume the spawning presence of steelhead, as well, during winter and spring seasons.

Catarac Creek was surveyed in 1996. Good number of brook trout up to 11 inches were found. In addition, surveyors found an abundant variety of minnow species. This stream was much colder than the Crow River, cooling considerably as it flows from Mud Lake downstream to Lake Michigan. For summer trout fishing, this is the creek to target in Simmons Woods.

McEarchern Creek was too small to work with. There appears to be little deep water habitat nor enough water volume to produce any viable fishery.

Flowing from Burn's Pond, Shedowin Creek is likely considerably warmer than Catarac Creek, probably emulating the Crow River for seasonal temperature regime. It was not surveyed by Fisheries personnel. It should be visually surveyed in the near future and a more intensive survey initiated if it shows management potential.

D COMMUNITY ECOLOGY AND HABITAT MANAGEMENT STRATEGIES

1 Coastal Wetlands Management

Beach and foredune communities occur along most of the shoreline of Simmons Woods and are typified by open sand with very sparse grasses,

including beachgrass (*Ammophila breviligulata*). Rare species that occur here include Pitcher's thistle (*Cirsium pitcheri*), Lake Huron tansy (*Tanacetum huronense*), and Houghton's goldenrod (*Solidago houghtonii*). This area is exposed to relatively high winds and wave action, both of which contribute to sand movement and shifting of the configuration of the beach and the interdunal wetlands that often lie directly behind the beach. The shifting sands are important for the germination and establishment of the Pitcher's thistle, in particular. This species cannot compete well with other species in areas of stable sand. Management of this area should be minimal and uses should be kept to low density hiking, fishing and sightseeing. Vehicles should be strictly prohibited from the beach and foredune.

An *interdunal wetland* is a herbaceous wetland community that occurs in calcareous pools between dunes, typically within three to four ridges of the shore. Common species include twig-rush (*Cladium mariscoides*), beak-rush (*Rhynchospora capillacea*), and rush (*Juncus balticus*). Other species include bladderworts (*Utricularia* spp.) and white camas (*Zigadenus glaucus*). Houghton's goldenrod can also occur here on the margins of the wetlands. These wetlands can support high densities of insects and amphibians. One rare insect that is found in interdunal wetlands, though it hasn't been reported from Simmons Woods, is the Hines emerald dragonfly (*Somatochlora hinesiana*). Management considerations are similar to those of the beach and foredune; low-impact uses only are appropriate.

The *Great Lakes Dune Pine Forest* community occurs within the wooded dune and swale complex on the dunes that are high enough to be at least well drained. Overstory species include a mixture of white pine (*Pinus strobus*), red pine (*P. resinosa*), and jack pine (*P. banksiana*). White spruce (*Picea glauca*), paper birch (*Betula papyrifera*), and trembling aspen (*Populus tremuloides*) also occur. Ground juniper (*Juniperus communis* var. *depressa*) and bearberry (*Arctostaphylos uva-ursi*) are prevalent in the understory. Dwarf lake iris (*Iris lacustris*) is a rare species that occurs in good populations on the dunes adjacent to the open and grassy dunes near the shore. These forested dunes can provide critical habitat for migratory birds, such as the yellow-rumped warbler and Canada warbler, during early spring when the only food to be found are the aquatic insects hatching from the nearshore waters and interdunal wetlands. These areas are somewhat more tolerant of hiking and other non-motorized recreation than the beaches and interdunal wetlands, except near the shore where the dwarf lake iris occurs. Timber harvest should be kept to a minimum within a quarter mile of the shore to ensure the site remains valuable for migratory birds.

2 Grasslands

The intrinsic value of Simmons Woods lies within the diversity and juxtaposition of the habitats on the property. This diversity allows for the maintenance and management of several different biological communities and their associated wildlife. The following paragraphs discuss the various communities found within Simmons Woods and the management strategies to be applied.

There are 117 acres of grassy openings in Simmons Woods. Of that total, one opening constitutes 28 acres; a second covers 19 acres. The remaining grassy opening habitat is contained within small areas ranging from one to 10 acres in size. Due to their size, soil characteristics and precipitation patterns, these openings do not function as true grassland ecosystems but rather as an edge component within a larger forested ecosystem. This is reflected in the wildlife community using those areas. A true grassland community in upper Michigan would contain, among others, species such as bobolinks, eastern meadowlarks, merlins, upland sandpipers and in some cases, sharp-tailed grouse. At present, we are unaware of any occurrences of these species in Simmons Woods.

Although the grassy openings in Simmons Woods do not provide habitats for species normally associated with large opening complexes, they do provide a valuable component within the forested ecosystem. There are over 100 wildlife species in upper Michigan that utilize these openings. As such, maintenance of this component is considered vital to diversity and will be a part of the over-all management scheme in those areas not designated as old growth. Maintenance can be accomplished through the use of either mechanical treatment or fire and will be scheduled as the area biologist deems necessary. In certain instances, naturalized non-noxious herbaceous plants may be seeded into these areas to provide high quality food for wildlife.

3 Uplands (Ecology Discussion)

a General Forest Management

We will leave a 200 foot set back along Scrams Creek and along the stream out of Stone Lake and into the Catarac River. This will provide continued shading along these streams and also discourage beaver activity. Beaver damming would interrupt steelhead trout runs up these streams.

There will be very limited cutting allowed in the proposed Old Growth Area and that is covered in **Section D 6 “Old Growth”**.

On the rest of the areas of Simmons Woods, except for identified karst areas, normal forest management practices will be followed that are practiced on the Sault Management Unit/Naubinway Forest Area.

See Appendix G – Simmons Woods: Acres Prescribed for Treatment

1) Forest Management Activities for Karst Areas

Research literature has identified a link between forest site productivity and karst. Karst areas are inherently more productive when compared with equivalent sites with non-karst bedrock types. Increased productivity can be attributed to nutrient rich soils with higher base saturation and well developed subsurface drainage. The greater the epikarst (over the karst) development the greater the surface/subsurface connection which provides vertical nutrient transport. Disturbance of forest cover and soils in

karst landscapes can reverse the positive flow of the nutrients to the surface and result in the vertical migration of nutrients and soil beyond the depth of the rooting zone. Karst systems are productive, but fragile.

Our karst management strategy should be to maintain the capability of the karst landscape to regenerate a forest after harvest, to maintain the quality of the waters issuing from the karst hydrologic systems, and protect the many karst resource values within the underlying cave systems.

It is essential to view karst as a system, not a collection of discrete surface features. It is also important to remember that most caves have no entrances accessible to humans but are still sensitive to disturbances. Surface features are clues to the existence of these entranceless caves. There are typically on the order of ten times as many entranceless proper caves as have natural entrances, although they are on the average shorter in length.

Karst vulnerability mapping utilizes the fact that some parts of a karst landscape are more sensitive than others to planned land uses. The key elements of the strategy focus on the openness of the karst system and its ability to transport water, nutrients, soil and debris, and pollutants into the underlying hydrologic systems. Some general characteristics of karstlands that should be noted during pre-harvest site assessment include:

- An overall lack of perennial first and second-order streams, where surface flow and runoff are pirated underground via sinking streams. These may appear to be dry surface channels during late summer and fall, but can exhibit sudden, voluminous flows in response to rainfall and snow melt;
- The presence of sinkholes, closed depressions, rocky outcrops, springs, and caves.

Dye tracing may be necessary to define the karst hydrologic system. Dye tests should be conducted during both high and low flow periods to help define the full complexity of the system. Partners (like Michigan Karst Conservancy) can and should play a major role in helping to define and characterize the karst hydrologic system and conduct the dye traces.

One of the most important determinants of karst vulnerability is the degree of epikarst development, as evaluated by the frequency and depth of the discrete surface karst features.

Epikarst controls the transfer of water (and suspended or dissolved material) to the underlying conduits and caves. Features can range in size from dry gullies to dissolution sinks and collapsed underground drainages. The better developed epikarst is considered to be the more vulnerable to surface disturbances. The thickness and characteristics of the overlying soil are known to influence epikarst dissolution rates.

Timber harvest will not be permitted on high vulnerability karst. Such karst is defined by the presence of any one of a number of features. Such features are caves, karst on very steep slopes, sinks or other epikarst over 8 feet in depth, insurgences (disappearing streams), and resurgences (appearing streams). These high vulnerability karst will require windfirm buffers of no less than 100 feet around the feature or two tree lengths if tree species are not windfirm and over 50 feet in height.

As a rule, features are not isolated but are parts of a much bigger system. Therefore, a systematic approach to inventory the area prior to timber sale preparation is necessary. This is especially true of large, contiguous areas of carbonate rock, such as occurs under much of Simmons Woods.

Areas identified with at least moderate vulnerability will have the following modification made.

a) Timber Harvest

Harvesting by any known method inevitably results in some damage to the thin soils that generally overlie limestone. To moderate this effect over time, we will lengthen even-age rotations from 40-50 years to 60-70 years and the cutting cycle on uneven-age stands from 12-15 years to 25 years. Specifications should limit harvest work when rutting is minimal in the winter or during dry periods of the year.

In stands to be clearcut, no full tree harvesting will be allowed so that tops are left on site to help reduce soil and humus movement after heavy rains. Limbs and other residual logging wastes are to be left in place and not windrowed or bunched into piles. In these areas, firewood permits should not be issued.

If mechanical harvesting is allowed in selectively harvested stands, only directional felling equipment will be allowed to be used to avoid dropping trees over identified karst features or their boundaries.

If any selective harvesting or individual windthrown harvesting is allowed within karst buffer areas, it will only be allowed if minimal disturbance can be assured. Areas of unavoidable or unintentional ground disturbance and exposed soil are to be stabilized by methods such as artificial seeding of native species and/or annual rye and mulched with straw.

Harvesting activities will be closely monitored to ensure cutting specifications are adhered to and an on-site pre-harvest meeting will be required to discuss cutting specifications and any karst features.

b) Roads

If roads are needed into a timber sale area with at least moderate vulnerability, land management staff must decide on the location and not the logger doing the cutting. Where new roads are needed, they should follow ridge lines if possible and not be any closer than 300 feet of any stream, dry stream bed or cave entrance. Roads with down slopes should have ditch diversions or waterbars on them to prevent sediment-laden waters from reaching any watercourses. These areas should be revegetated after harvesting with native seeding and/or annual rye and straw mulch.

Trees pushed out to create the road, have to have the stump portion bucked off and stood upright to reduce soil being washed off the rootball, as well as for safety and appearance on the site. After completion of timber harvesting, any new roads will be required to be closed by filling with tree tops and berming.

For road maintenance of identified DNR roads in Simmons Woods, only selective contact herbicides along maintained road edges are allowed. These chemicals must be biodegradable on ground contact.

c) Management of Fuel

Loggers must have spill and leak containment and cleanup material on site to operate. Fueling of mechanized equipment must be up on designated landings or roads, not down into the woodlands being treated. Oil absorbents must be on-site just in case of petroleum based spills in refueling and for line breaks/bursts in the woodlands. These absorbents are to be immediately used when a spill happens to minimize contamination of the karst water system.

d) Fire

Use of prescribed burning is not an acceptable management tool in forested karst areas with shallow soils. Only minimal impact wildfire tactics will be allowed in at least moderate karst vulnerability areas, which will need to be identified on a map for fire planning.

b Wildlife Management

Forested lands dominate Simmons Woods, comprising 92 percent (9203 acres) of the area. Of that total, 7522 acres are classified as forested uplands. Forested lowlands cover 1681 acres.

Northern hardwood systems generally provide the greatest opportunity for within stand diversity management. Although normally dominated by sugar maple, these forest types generally contain additional species such as hemlock, white pine, white spruce, balsam fir, birch (white and yellow), aspen, red maple, basswood, ironwood, black cherry and American beech. In addition, most northern hardwood stands contain a fair amount of down woody material, den trees and snags. Under normal state land management practices, diversity is encouraged through selective harvest, which maintains all components while creating additional canopy layers within the stand. Usually, northern hardwood stands are entered every 10 - 20 years. This general principle will be applied to all northern hardwood stands except those over sensitive karst features or designated as "old growth". Stands that occur over sensitive karst features will be managed on longer rotational cycles. Old growth management is addressed later in this report.

Aspen is one of the most valuable forest types in terms of game species management. Proper management of aspen will provide quality habitat that will be used by white-tailed deer, moose, black bear, snowshoe hare, ruffed grouse and woodcock. In addition, a large number of non-game predatory species also benefit from aspen management. Currently, approximately 75 percent of the aspen is in the regenerating stage. Generally, these stands will be harvested again when they attain an age of 40 years. There will be, however, some exceptions to this rule. Some stands may be harvested in more (or less) than 40 years to attain better balance in the aspen age structure. In addition, aspen stands over sensitive karst features (such as those near Stone Lake) will be harvested on 60 to 70 year rotations to lessen the impact on the karst. With the exception of old growth designated areas, management of the aspen type will consist of conducting clearcuts as prescribed during the compartment review process. Within the old growth area, aspen stands will be allowed to proceed through natural successional pathways. Windfall and other natural disturbances will most likely maintain an aspen presence although the total amount remains to be seen.

4 Lowlands

Forested lowlands are dominated by 1393 acres of northern white cedar ecosystems. This constitutes 83 percent of the wet forested lands. The vast majority of the northern white cedar type lies within the old growth designation and will not be manipulated. Any remaining cedar stands outside the old growth area will be managed through normal state land management practices. Due to the thermal cover value and the difficulties of regenerating cedar in the southern U.P., cedar is generally not harvested in this area. This decision will be made through the compartment review process.

5 Streams, Rivers and Lakes (Ecology)

Forest management near Simmons Woods water bodies should be conservative, aimed toward discouragement of beaver. The two major water flows, the Crow River and the Catarac Creek, both have sensitive habitats. The Crow River has the habitat structure and open water flows to support migrating salmonid and smelt spawning runs. A shift in terrestrial riparian habitat that would attract beaver will destroy this system's fishery value. Beaver routinely build in high-gradient areas, flooding gravel bottomed spawning flows with deep standing water or the dam itself. Further, the dams will limit fish passage upstream into potential spawning habitat. Catarac Creek provides very good brook trout habitat. Beaver ponds would warm the water similarly to the ponds in the Crow River, thus driving adult brook trout out of the system. Likewise with the Crow River, dams would flood spawning habitat and limit spawning migrations.

Only two lakes and two streams showed limnologies that could correlate into positive management potential. Duel and Brown's Lakes are discussed individually, while the Crow River and Catarac Creek are discussed generically.

Duel Lake's limnology suggests that smallmouth bass would survive very well and reproduce naturally. They would also help control the panfish community. We initiated a stocking program for bass fingerlings during August 1997. The lake also contains a unique habitat consisting of submerged timber and lumber slabs in the southeast corner that is especially prized by black crappies. This was an exciting find - black crappies are rare in District 4. We intend to develop a black crappie rearing pond in the near future and stock fingerlings into Duel Lake.

The fish community in Brown's Lake is possibly skewed due to angling harvest of pike. Now, large numbers of bullheads are limiting spawning success for both pike and perch. A second complicating factor concerns the absence of any large forage species. Pike need larger forage such as suckers or lake herring to grow to their fullest potential. Management plans are to conduct a manual removal of bullheads during the spring season. Once bullheads are at a reasonable population level, the other fish should be able to rebound by themselves. Even so, and once bullhead control is achieved, the issue of establishing a large forage species in order to develop the best pike fishery possible has to be addressed.

Duel Lake suffers from lack of pike spawning habitat. Brown's Lake suffers from inability of pike to get away from anglers. And the isthmus between them is a gravel bar of roughly 150 foot width. For fisheries values alone, it would be beneficial to excavate an open-water channel between the two lakes. Such excavation may never occur and it may not even be desirable within the Simmons Woods management scheme. But the two fisheries communities would become better balanced and more stable as a result. That channel might also negate the requirement for any further extensive management efforts in either lake.

Potential exists for streambank protection and habitat enhancement. Special enhancement structures such as K-Dams, deflectors, log-and-bank shelters, wedge dams and flow constrictors all would be useful. Both manageable streams contain a large sand bedload, expose spawning gravel, etc. Such management effort should be considered in the near future.

6 Old Growth

Approximately 42 percent of Simmons Woods has been designated for potential old growth nomination (see map). This designation links two previously nominated old growth areas. The resultant old growth stand contains more than 15 miles of contiguous Lake Michigan shoreline. In addition to the shoreline habitat, this designation also provides a corridor along the Crow River system, thereby protecting habitat for a coaster brook trout population. The old growth designation also protects sensitive habitats such as the dune and swale complex and endangered plants that occur along the Lake Michigan shoreline. Attempts were made in the designation process to ensure that most all forest types were represented within the old growth area.

The old growth designation does not necessarily limit access to the public to this portion of the forest. Rather, it is a modification of the timber management activities within the designated area. In general, there will be no timber harvest scheduled in the old growth area. Hazard trees near roads and camp sites may be removed. Maintenance of existing roads will also be allowed. Traditional uses such as hunting, trapping, fishing and hiking will continue to be acceptable with this designation.

See Appendix H – Simmons Woods: Proposed Old Growth

7 Threatened and Endangered Species and Rare Communities

A complete survey for threatened and endangered species has not been conducted. As such, we have relied upon a search of the Michigan Natural Features Inventory (MNFI) database and personal knowledge of Naubinway Forest Area personnel for this discussion. MNFI data showed only three occurrences of rare and unique features in Simmons Woods. Of these, two are birds (bald eagle and common loon) which are listed as threatened in Michigan. The third, wooded dune and swale complex, is a rare and sensitive habitat type. In addition to these occurrences, it is known that Pitcher's thistle and Lake Huron tansy can be found growing along the Lake Michigan shoreline. Gray wolves have also been located in Simmons Woods.

The probability for other threatened or endangered species occurring in Simmons Woods is high. For example, habitat components for walking fern and Hart's tongue, primarily large limestone boulders within northern hardwood stands, are found in many locations. Dwarf Lake Iris, a wetland species often associated with limestone, is another possible resident of the area. It is expected that as more experience is gained within Simmons Woods, additional occurrences of rare elements will be recorded.

The Michigan Endangered Species Act, which is now a part of the Michigan Compiled Natural Resources Act PA 534, states that, "The department shall perform those acts necessary for the conservation, protection, restoration, and propagation of endangered and threatened species of fish, wildlife and plants". To that end, resource management in Simmons Woods will be conducted in a manner consistent with this law for all known occurrences of threatened or endangered species.

F PUBLIC USE MANAGEMENT

1 Road Access

It was the consensus of the advisory committee that the historical public entrance to Simmons Woods be maintained and to keep all other possible entrances bermed closed, blocked by boulders or gated. A Director's Order has been requested for these closures.

The committee also approved the following roads as the DNR maintained roads on state land in Simmons Woods:

| | |
|---|-----------|
| Bovee to Amadon Trail | 3.0 miles |
| Amadon Trail (portion) | 2.6 miles |
| Three Tubes over to Amadon Trail | .6 miles |
| Shedowin Trail (Lundy's camp) | 1.3 miles |
| Simmons Trail to W. end Brown Lake Rd. | 4.8 miles |
| Simmons Trail back to entrance to S.W. | 1.7 miles |
| To SW side of Duel Lake (camping & lake access) | .2 miles |
| Fox Pointe Road | 1.1 miles |
| Brown Lake Road | 1.4 miles |

See Appendix I – Simmons Woods: Maintained Road System

This amounts to a total of 16.7 miles of roads to be maintained by the DNR, which does not excessively cut down the present road system. LaPine Grade and other roads not part of the list will be maintained sporadically as part of timber harvesting activities over time.

The old swayback bridge (north crossing) over Scrams Creek has been removed because of safety reasons and will be replaced when funds become available. Its replacement has been proposed for a National Guard construction

project for 2003, along with the bridge over Shedowin Creek. The south crossing of Scrums Creek on the Amadon Trail has been proposed to be replaced with a cement based ford crossing.

2 Facilities

a) Buildings

The advisory committee recommended the Bethlehem House be kept for educational purposes and the old caretaker's (gatekeeper's) house be kept for DNR purposes. Since those recommendations in 1997, there has been no use of the Bethlehem House and the pump to the well does not work. Also since that time, the roof on the caretaker's house has gotten bad enough that mold is developing in the upstairs rooms in the winter. Due to lack of funding for renovations, we recommend that both buildings be removed from Simmons Woods as soon as possible.

The 28' X 62' metal pole building near the caretaker's house will be retained for DNR cold storage due to lack of adequate storage at the Naubinway Field Office.

The advisory committee recommended that some buildings be preserved for historic reasons. Without any funding, Lundy's Camp and the Amadon House (Wolf House) will not be removed but will eventually succumb to the ravages of Mother Nature.

b Restrooms

A single ADA toilet has been installed at Steakfry Beach to replace an old single-seat toilet. Another single ADA toilet at Duel Lake has been installed to replace a two-seat toilet. These toilets will get infrequent maintenance as the users will be responsible for some maintenance as they have done in the past. The old toilets are to be removed in the future.

3 Camping

It was decided we would not develop any campgrounds or sites in Simmons Woods but allow dispersed primitive camping as has been allowed in the past. Campsites along the banks of the Catarac River that are being degraded down to the water's edge by use should be closed. If any other particular campsite is getting overused, it could be closed for restoration.

The hand pump well at Duel Lake has be replaced and other health concerns taken care of. In the past, during rifle deer season dispersed camping was only allowed at Duel Lake. To continue this practice would require a Director's Order.

4 ORV Use

ORV use will be confined to the existing road system and no specific trails will be developed for this use. No wheeled vehicles will be allowed off road, including ORV's and bicycles.

5 Traditional Hunting, Trapping and Fishing

The entire Simmons Woods parcel will be open to hunting, trapping and fishing. Generally, State of Michigan rules and regulations will apply.

6 Interpretive and Educational Activities

The Simmons Woods area has historical, biological and geological significance. Providing accurate, interesting and complete information on these subjects will give both visitors and residents an opportunity to understand and appreciate this special place.

To achieve these objectives, the Simmon's Woods Advisory Committee discussed the following steps:

- ***Use the Bethlehem House for Educational Purposes***
- ***Place an educational sign explaining the significant historic and geological features***
- ***Form the "Friends of Simmons Woods" to help the DNR restore the Bethlehem House, review and collect historical information and material, and provide other assistance***

Due to the state of disrepair, the Bethlehem house will be removed rather than restored.

As a condition of purchase, the Department of Natural Resources is required to display a sign explaining that the property was bought with funds from The Nature Conservancy. Design and placement of other signs should balance aesthetic and educational values without putting rare plants or other features at risk. Ideally, signs and education will enhance the natural appeal of the lakes and woods without intruding on that primary experience. Through the educational information, the agency has an exceptional opportunity to explain the unusual association of the Niagara formation and the dune-swale complex in the tract.

The committee discussed several ways to inform visitors. These included kiosks, bulletin boards, pamphlets and brochures. In addition, either the DNR or other partners might consider developing audio tapes for automobile tours. Self guided nature trails offer opportunities for a closer look at the woods, the karst formations, and other natural features.

To help the DNR collect historical information, and guide plan execution, the committee discussed formation of the "Friends of Simmons Woods". "The Friends" can link the DNR with community residents and others interested in the project. In addition, local grammar schools, high schools, colleges and universities may undertake projects that study various elements of the woods. In turn, the DNR may use the results to strengthen educational offerings. Finally, the Karst Conservancy can help identify and explain important Karst features.

G LAND ACQUISITION

It is unlikely that the descendants of the Earle family that now own land around Dry Lake in Sections 1 and 2 would ever be willing to sell any of their in-holdings within the Simmons Woods property. Also, the three small private parcels in Section 22 that are in-holdings are unlikely to be offered to the state for purchase as there are cabins or residences on them. There is a possibility that the 80 acres in Section 21 and the 230 acres in Section 22 owned by Michigan Limestone Company could be purchased. They would have to be contacted to see if they are interested in disposing of these parcels. We would also have to have funds available.

Appendix A

Simmons Woods Advisory Committee*

***David E. and Judy L. Allen, Marquette Chapter, Sierra Club, Marquette**

David Badgley, Michigan Karst Conservancy, Trout Lake

Stanley Bell, Michigan Karst Conservancy, Flint

***Ronald Clark, Resident and Property Owner, Gould City**

***Dan DeLisle, Upper Peninsula Sportsman's Association, Munising**

***Peter Grieves, Michigan Association of Timbermen, Newberry**

***Aubrey Golden, President, Michigan Karst Conservancy, Union Lake**

Kim Herman, MI Natural Features Inventory, Lansing

***Leslie Homan, MDNR EUP Planner, Newberry**

***Bernard Hubbard, MDNR UP Forest Supervisor, Newberry**

***Terry Lane, Forester, Mead Corporation, Gulliver**

***Donald MacArthur, Newton Township Supervisor, Gould City**

***Bruce Gustafson, Supervisor, Law Division, Newberry**

Jan Miller, MDNR Law Division, Gould City (alternate)

***Jim O'Neil, Resident and Property Owner, Gould City**

***Doug Pearsall, The Nature Conservancy, Lansing**

***Raymond Perez, MDNR Wildlife Supervisor, Newberry**

Terry Minzey, MDNR Wildlife Biologist, Shingleton (alternate)

***Dean Reid, MDNR Unit Manager, Sault Ste Marie/Naubinway**

***Steve Scott, MDNR Fisheries Supervisor, Newberry**

Jim Waybrant, MDNR Fisheries Biologist, Newberry (alternate)

Mike Warner, Michigan Karst Conservancy, New York

***William Whippen, President, MI United Conservation Club, Munising**

***Scott and Karen Widmar, Superior Access, Chatham**

***Harry Yale, Resident and Property Owner, Gould City** (former Simmons Woods caretaker)

APPENDIX B

“Simmon’s Woods – A Short History” (1940)

APPENDIX C

SIMMONS WOODS LOCATION WITHIN STATE FOREST SYSTEM

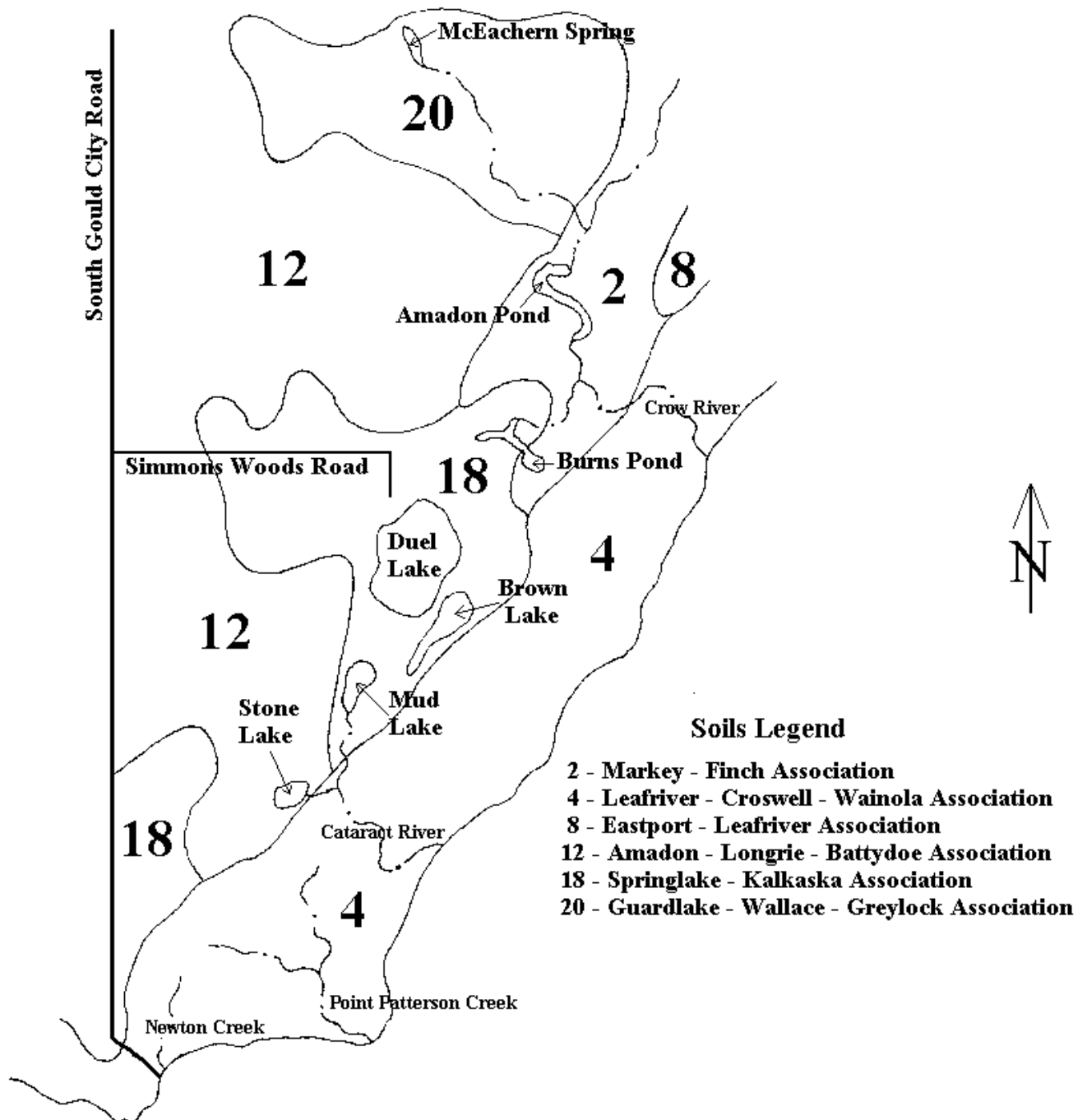
APPENDIX D

PLAT BOOK MAP SHOWING OWNERSHIP PATTERN

APPENDIX E

SIMMONS WOODS SOIL TYPE MAP AND SOILS MAP TOPOGRAPHY

Simmons Woods Soil Type Map



SOILS MAP TOPOGRAPHY

2. Topography: large level muck areas with low sandy ridge.

Use and management concerns for this complex: wetness, ponding, low strength, cutbanks cave and low filter.

4. Topography: low sandy ridges and swales that are wet sands and marshes. There are occasional sandy ridges with steep slopes.

Use and management concerns for this complex: wetness, shallow muck, ponding, poor filter, cutbanks cave and slope.

8. Topography: sandy ridges that can have steep slopes and swales that are wet sands or marshes.

Use and management concerns on this complex: depth of soil, slope, erosion hazard.

12. Topography: level areas of loamy soils with areas of exposed limestone bedrock. Occasional sandy and loamy soils on steep slopes.

Use and management concerns on this complex: depth of soil, slope, erosion hazard.

18. Topography: level areas of sandy soils with occasional gravel layers. Occasional gravel layers. Occasional steep slopes.

Use and management concerns on this complex: poor filter, cutbanks cave, slopes.

20. Topography: level areas of sandy and gravelly soils. Occasional steep slopes and loamy soils.

Use and management concerns on this complex: poor filter, cutbanks cave, slopes.

APPENDIX F

SIMMONS WOODS: ACRES BY COVER TYPE

Simmons Woods: Acres by Cover Type

February 2, 1999

| <u>Cover Type</u> | <u>Total Acres</u> | <u>Percent of Total Acres</u> |
|---------------------------|---------------------------|--------------------------------------|
| Aspen | 2621 | 26.92% |
| Black Spruce | 60 | 0.62% |
| Cedar | 1361 | 13.98% |
| Grass | 134 | 1.38% |
| Hemlock | 42 | 0.43% |
| Lowland Birch | 217 | 2.23% |
| Lowland Poplar | 46 | 0.47% |
| Marsh | 299 | 3.07% |
| Mixed Swamp Conifer | 110 | 1.13% |
| Non-Stocked | 82 | 0.84% |
| Paper Birch | 216 | 2.22% |
| Red Pine | 705 | 7.24% |
| Spruce Fir | 591 | 6.07% |
| Swamp Hardwoods | 44 | 0.45% |
| Tamarack | 27 | 0.28% |
| Upland Brush | 35 | 0.36% |
| Upland Hardwoods | 2664 | 27.37% |
| Water | 211 | 2.17% |
| White Pine | 270 | 2.77% |
| <u>Grand Total</u> | 9735 | |

APPENDIX G

SIMMONS WOODS: ACRES PRESCRIBED FOR TREATMENT

Simmons Woods: Acres Prescribed for Treatment

February 2, 1999

| Cover Type | Treatment | Total Acres | Percent of Total Acres |
|--------------------|---------------|-------------|---------------------------|
| Aspen | FINAL HARVEST | 496 | 18.92% |
| Paper Birch | FINAL HARVEST | 41 | 18.98% |
| Spruce Fir | FINAL HARVEST | 20 | 3.38% |
| Swamp Hardwoods | FINAL HARVEST | 44 | 100% |
| Upland Hardwoods | FINAL HARVEST | 54 | 2.03% |
| Upland Hardwoods | SELECTION | 81 | 3.04% |
| Upland Hardwoods | THINNING | 458 | 17.19% |
| Grand Total | | 1194 | |

APPENDIX H

SIMMONS WOODS: PROPOSED OLD GROWTH

Simmons Woods: Proposed Old Growth

February 2, 1999

| Cover Type | Total Acres | Percent of Total Acres |
|---------------------|-------------|---------------------------|
| Aspen | 368 | 14.04% |
| Black Spruce | 44 | 73.33% |
| Cedar | 1218 | 89.49% |
| Grass | 27 | 20.15% |
| Hemlock | 42 | 100% |
| Lowland Brush | 72 | 33.18% |
| Lowland Poplar | 41 | 89.13% |
| Marsh | 257 | 85.95% |
| Mixed Swamp Conifer | 79 | 71.82% |
| Non-Stocked | 58 | 70.73% |
| Paper Birch | 134 | 62.04% |
| Red Pine | 451 | 63.97% |
| Spruce Fir | 491 | 83.08% |
| Tamarack | 21 | 77.78% |
| Upland Hardwoods | 431 | 16.18% |
| Water | 148 | 70.14% |
| White Pine | 263 | 97.41% |
| Grand Total | 4145 | |

APPENDIX I

SIMMONS WOODS: MAINTAINED ROAD SYSTEM